

### **PROGRAM DESCRIPTION**

The Program of All-Inclusive Care for the Elderly (PACE) features a comprehensive and seamless service delivery system and integrated Medicare and Medicaid financing. Eligible individuals are age 55 years or older and meet the clinical criteria to be admitted to a nursing home but choose to remain in the community. An array of coordinated services is provided to support PACE participants to prevent the need for nursing home admission. An interdisciplinary team, consisting of professional and paraprofessional staff, assesses participants' needs; develops care plans; and delivers or arranges for all services (including acute care and, when necessary, nursing facility services), either directly or through contracts. PACE programs provide social and medical services, primarily in an adult day health center setting referred to as the "PACE center," and supplement this care with in-home and referral services in accordance with the participants' needs. Each participant can receive all Medicare- and Medicaid-covered services, as well as other care determined necessary by the interdisciplinary team.

**Important note about implementation requirements:**

For a health care organization to be approved as a PACE program, the State must elect PACE as a voluntary State option under its Medicaid plan. In addition, the prospective PACE organization and the State must work together in the development of the PACE provider application. On behalf of the prospective provider, the State submits the application to the Centers for Medicare and Medicaid Services (CMS) with assurance of the State's support of the application and its contents. Each approved PACE program receives a fixed amount of money per PACE participant regardless of the services the participant utilizes.

### **DESCRIPTIVE INFORMATION**

<b>Areas of Interest</b>	<ul style="list-style-type: none"> <li>▶ Health and wellness</li> <li>▶ Long-term services and supports</li> <li>▶ Mental health promotion</li> </ul>
<b>Outcomes</b>	<p><b>Review Date: June 2007</b></p> <ul style="list-style-type: none"> <li>▶ Utilization of medical services</li> <li>▶ Utilization of support services</li> <li>▶ Perceived health status, functional status, and overall quality of life</li> <li>▶ Mortality rate</li> <li>▶ Comorbidity diagnoses</li> </ul>
<b>Ages</b>	<ul style="list-style-type: none"> <li>▶ 50–60 (Older adult)</li> <li>▶ 61–74 (Older adult)</li> <li>▶ 75–84 (Older adult)</li> <li>▶ 85+ (Older adult)</li> </ul>
<b>Genders</b>	<ul style="list-style-type: none"> <li>▶ Female</li> <li>▶ Male</li> </ul>

<b>Races/Ethnicities</b>	<ul style="list-style-type: none"> <li>▶ Asian</li> <li>▶ Black or African American</li> <li>▶ Hispanic or Latino</li> <li>▶ White</li> <li>▶ Race/ethnicity unspecified</li> </ul>
<b>Settings</b>	<ul style="list-style-type: none"> <li>▶ Home</li> <li>▶ Outpatient</li> <li>▶ Residential care facility</li> <li>▶ Other community settings</li> </ul>
<b>Geographic Locations</b>	<ul style="list-style-type: none"> <li>▶ Urban</li> <li>▶ Suburban</li> <li>▶ Rural and/or frontier</li> </ul>
<b>Adverse Effects</b>	No adverse effects, concerns, or unintended consequences were identified by the developer.
<b>Implementation History</b>	The PACE model of care can be traced to the early 1970s, when the Chinatown community of San Francisco saw the pressing need for long-term-care services for immigrant elders and their families. The On Lok Senior Health Services nonprofit corporation was formed to create a community-based system of care based on the British day-hospital model, combining housing, medical, and social services. In 1997, Federal legislation authorized PACE as a permanent Medicare benefit and a Medicaid State plan optional service. As of March 2013, there were 92 PACE organizations providing care to more than 26,000 individuals in 31 States.
<b>Adaptations</b>	No population- or culture-specific adaptations were identified by the developer.

## QUALITY OF RESEARCH

**Review Date:** June 2007

### Documents Reviewed

The documents below were reviewed for Quality of Research. The research point of contact can provide information regarding the studies reviewed and the availability of additional materials, including those from more recent studies that may have been conducted.

#### Study 1

Chatterji, P., Bustein, N. R., Kidder, D., & White, A. (1998, July). *Evaluation of the Program of All-Inclusive Care for the Elderly (PACE) demonstration: The impact of PACE on participant outcomes. Final report to the Health Care Financing Administration*. Cambridge, MA: Abt Associates.

#### Study 2

Wieland, D., Lamb, V. L., Sutton, S. R., Boland, R., Clark, M., Friedman, S., ... Eleazer, G. P. (2000). Hospitalization in the Program of All-Inclusive Care for the Elderly (PACE): Rates, concomitants, and predictors. *Journal of the American Geriatrics Society*, 48(11), 1373–1380. PubMed abstract available at

<http://www.ncbi.nlm.nih.gov/pubmed/11083311>



Williamson, J. D. (2000). Improving care management and health outcomes for frail older people: Implications of the PACE model. *Journal of the American Geriatrics Society*, 48(11), 1529–1530. PubMed abstract available at <http://www.ncbi.nlm.nih.gov/pubmed/11083339>

### **Study 3**

Massachusetts Division of Health Care Finance and Policy. (2005). *PACE evaluation summary*. Unpublished manuscript.

### **Study 4**

Sands, L. P., Wang, Y., McCabe, G. P., Jennings, K., Eng, C., & Covinsky, K. E. (2006). Rates of acute care admissions for frail older people living with met versus unmet activity of daily living needs. *Journal of the American Geriatrics Society*, 54(2), 339–344. PubMed abstract available at <http://www.ncbi.nlm.nih.gov/pubmed/16460389>

## **Supplementary Materials**

Greenwood, R. (2001). The PACE model. *Center for Medicare Education Issue Brief*, 2(10), 1–7.

National PACE Association. (2001). *State assessment of PACE: Tennessee*. Alexandria, VA: Author.

National PACE Association. (2001). *State assessment of PACE: Texas*. Alexandria, VA: Author.

National PACE Association. (2003). *Core resource set for PACE. Considerations for monitoring quality assurance across PACE centers*. Alexandria, VA: Author.

National PACE Association: How NPA Supports Its Members

PACE Expansion Initiative: Final Progress Report to the Robert Wood Johnson Foundation, January 1, 2001–July 30, 2004

PACE Quality: Overview of Assessments and Findings

## **Outcomes**

### **Outcome 1: Utilization of Medical Services**

Description of Measures	Utilization of medical services was analyzed using the following measures:
	<ul style="list-style-type: none"><li>▶ Hospital utilization: any inpatient hospital admission, number of inpatient hospital days, and length of stay</li><li>▶ Nursing home utilization: any nursing home admission and number of nights spent in a nursing home</li><li>▶ Utilization of ambulatory services: any ambulatory care visits (i.e., visits with doctors, therapists, or other medical professionals) and number of ambulatory visits</li><li>▶ Emergency department utilization: total emergency department visits</li><li>▶ Acute admission: an acute illness that prevented the patient from remaining at home and would have required a hospital admission</li></ul>

	Data for these measures were from the Abt Associates, Inc., survey of PACE participants and program sites; DataPACE, a comprehensive data collection system containing data from PACE programs; and the Massachusetts Division of Health Care Finance and Policy.
<b>Key Findings</b>	In several studies, PACE participants were compared to various other groups: older adults who expressed interest in PACE but decided not to enroll, individuals receiving Medicare due to age or disability, nursing home residents, and older adults who were eligible for nursing home care but were receiving care at home. PACE participants had significantly lower rates of hospital, nursing home, and emergency department utilization and lower overall rates of inpatient days than participants in the comparison groups ( $p = .01-.10$ ). Meanwhile, PACE enrollees had higher utilization of ambulatory services than comparison group members. The size of the impact of PACE on these results decreased over time.
<b>Studies Measuring Outcome</b>	Studies 1–4
<b>Study Designs</b>	<ul style="list-style-type: none"> <li>▶ Quasi-experimental</li> <li>▶ Preexperimental</li> </ul>
<b>Quality of Research Rating (0.0–4.0 scale)</b>	2.4

## Outcome 2: Utilization of Support Services

	Utilization of support services was analyzed using the following measures:
<b>Description of Measures</b>	<ul style="list-style-type: none"> <li>▶ Utilization of an adult day center: any attendance of an adult day center and frequency of attendance of an adult day center (times per week)</li> <li>▶ Utilization of home nurses: any home visits from a nurse and number of visits from a nurse in the past 6 months</li> <li>▶ Receipt of formal care: receipt of any formal (paid) care and receipt of formal care at least five times per week</li> </ul> <p>Data for these measures were from the Abt Associates, Inc., survey of PACE participants and sites.</p>
<b>Key Findings</b>	PACE participants were far more likely to attend adult day centers and less likely to need any home visits by a nurse than comparison group members (individuals who expressed an interest in PACE but decided not to enroll) ( $p < .05$ ). Meanwhile, the likelihood and intensity of formal care services were higher in the comparison group than among PACE participants, but the difference was not statistically significant.
<b>Studies Measuring Outcome</b>	Study 1
<b>Study Designs</b>	Quasi-experimental
<b>Quality of Research Rating (0.0–4.0 scale)</b>	2.5

### Outcome 3: Perceived Health Status, Functional Status, and Overall Quality of Life

<b>Description of Measures</b>	To measure the impact of PACE on perceived health status and overall quality of life, participants (or their proxy respondent) were asked questions to determine, for example, whether the participant was in good or excellent health; whether the participant's life was satisfying; and whether the participant attended social, religious, or recreational programs at least once a week. For functional status, participants (or their proxy respondent) were asked about their activities of daily living (ADL) and instrumental activities of daily living (IADL) limitations (e.g., whether the participant had a behavioral problem, the number of ADL limitations, the number of IADL limitations, and whether the participant used an assistive device).
<b>Key Findings</b>	PACE participants reported better health status and quality of life and less deterioration in physical function than comparison group members (individuals who expressed an interest in PACE but decided not to enroll) ( $p = .01-.10$ ). These effects were most dramatic during the first 6 months of enrollment in PACE.
<b>Studies Measuring Outcome</b>	Study 1
<b>Study Designs</b>	Quasi-experimental
<b>Quality of Research Rating (0.0-4.0 scale)</b>	2.5

### Outcome 4: Mortality Rate

<b>Description of Measures</b>	To measure the impact of PACE on mortality, data from Medicare enrollment records were used. The observation period for the analysis sample ranged from 11 days to 2.5 years.
<b>Key Findings</b>	Over the course of the observation period, 19% of PACE enrollees died, compared with 25% of comparison group members (individuals who expressed an interest in PACE but decided not to enroll) ( $p = .03$ ).
<b>Studies Measuring Outcome</b>	Study 1
<b>Study Designs</b>	Quasi-experimental
<b>Quality of Research Rating (0.0-4.0 scale)</b>	2.5

### Outcome 5: Comorbidity Diagnoses

<b>Description of Measures</b>	Comorbidity diagnoses were measured using the average number of diagnoses per discharge. The data were from the Massachusetts Division of Health Care Finance and Policy.
<b>Key Findings</b>	One study compared PACE participants to two other groups: a waiver group

	consisting of people eligible for nursing home care but receiving care at home and a group of nursing home residents. Overall, the PACE group and waiver group had slightly fewer diagnoses per discharge (8.41 and 8.49, respectively) than the nursing home group (9.09).
<b>Studies Measuring Outcome</b>	Study 3
<b>Study Designs</b>	Quasi-experimental
<b>Quality of Research Rating (0.0-4.0 scale)</b>	2.3

## Study Populations

The following populations were identified in the studies reviewed for Quality of Research.

Study	Age	Gender	Race/Ethnicity
<b>Study 1</b>	<ul style="list-style-type: none"> <li>▶ 50–60 (Older adult)</li> <li>▶ 61–74 (Older adult)</li> <li>▶ 75–84 (Older adult)</li> <li>▶ 85+ (Older adult)</li> </ul>	<ul style="list-style-type: none"> <li>▶ 69% Female</li> <li>▶ 31% Male</li> </ul>	<ul style="list-style-type: none"> <li>▶ 46% Race/ethnicity unspecified</li> <li>▶ 33% Black or African American</li> <li>▶ 21% Hispanic or Latino</li> </ul>
<b>Study 2</b>	<ul style="list-style-type: none"> <li>▶ 50–60 (Older adult)</li> <li>▶ 61–74 (Older adult)</li> <li>▶ 75–84 (Older adult)</li> <li>▶ 85+ (Older adult)</li> </ul>	<ul style="list-style-type: none"> <li>▶ 71% Female</li> <li>▶ 29% Male</li> </ul>	Data not reported/available
<b>Study 3</b>	<ul style="list-style-type: none"> <li>▶ 50–60 (Older adult)</li> <li>▶ 61–74 (Older adult)</li> <li>▶ 75–84 (Older adult)</li> <li>▶ 85+ (Older adult)</li> </ul>	Data not reported/available	Data not reported/available
<b>Study 4</b>	<ul style="list-style-type: none"> <li>▶ 50–60 (Older adult)</li> <li>▶ 61–74 (Older adult)</li> <li>▶ 75–84 (Older adult)</li> <li>▶ 85+ (Older adult)</li> </ul>	<ul style="list-style-type: none"> <li>▶ 70% Female</li> <li>▶ 30% Male</li> </ul>	<ul style="list-style-type: none"> <li>▶ 51% White</li> <li>▶ 20% Black or African American</li> <li>▶ 17% Asian</li> <li>▶ 10% Hispanic or Latino</li> <li>▶ 2% Race/ethnicity unspecified</li> </ul>

## Quality of Research Ratings by Criteria (0.0–4.0 scale)

Criterion	Ratings				
	Outcome 1	Outcome 2	Outcome 3	Outcome 4	Outcome 5
<b>Reliability of Measures</b>	2.5	2.5	2.5	2.5	2.5
<b>Validity of Measures</b>	2.5	2.5	2.5	2.5	2.5
<b>Intervention Fidelity</b>	2.0	2.0	2.0	2.0	2.0
<b>Missing Data and Attrition</b>	2.0	2.5	2.5	2.5	1.5
<b>Potential Confounding Variables</b>	2.0	2.0	2.0	2.0	2.0
<b>Appropriateness of Analysis</b>	3.4	3.5	3.5	3.5	3.5
<b>Overall Rating</b>	2.4	2.5	2.5	2.5	2.3

### Study Strengths

A training manual that defined measures and training procedures was used to ensure adequate psychometric properties. The program showed basic fidelity and national program support for implementation. Analyses were thoughtful, appropriate, and well done.

### Study Weaknesses

The methods of gathering information left questions about the data's accuracy. The comparison groups, when present, were convenience controls and limit inferences of causation to the outcomes. Attrition and missing data were often not addressed fully.

# READINESS FOR DISSEMINATION

Review Date: June 2007

## Materials Reviewed

The materials below were reviewed for Readiness for Dissemination. The implementation point of contact can provide information regarding implementation of the program and the availability of additional, updated, or new materials.

Greenwood, R. (2001). The PACE model. *Center for Medicare Education Issue Brief*, 2(10), 1–7.

National PACE Association. (2002). *Business planning checklist for new PACE programs*. Alexandria, VA: Author.

National PACE Association. (2003). *Core resource set for PACE. Considerations for monitoring quality assurance across PACE centers*. Alexandria, VA: Author.

National PACE Association. (2006). *PACE medical director's handbook*. Alexandria, VA: Author.

National PACE Association. (n.d.). *A guide to preparing the PACE provider application*. Alexandria, VA: Author.

PACE Web site, <http://www.npaonline.org>

## Readiness for Dissemination Ratings by Criteria (0.0–4.0 scale)

Criterion	Rating
Implementation Materials	4.0
Training and Support	4.0
Quality Assurance	4.0
Overall Rating	4.0

## Dissemination Strengths

The program materials include a comprehensive set of core resources providing guidance for starting, administering, and operating the PACE program. Program materials also include tips for partnering with State and Federal governments. High quality training and support resources are available online and through membership with the National PACE Association. Protocols for standardized implementation and oversight by the medical director are provided to support quality assurance.



## Dissemination Weaknesses

Most of the detailed guidance documents are available only to members of the National PACE Association. Given the complexity of this model, it would be necessary to join this association in order to benefit from its work and that of its other members.

## COSTS

The cost information below was provided by the developer. Although this cost information may have been updated by the developer since the time of review, it may not reflect the current costs or availability of items (including newly developed or discontinued items). The implementation point of contact can provide current information and discuss implementation requirements.

### Implementation Materials

Item Description	Cost	Required by Developer
Exploring PACE membership	\$3,000 per organization	Yes
Prospective provider membership	\$11,400 per organization	Yes
Provider membership	\$15,000 per organization, plus additional fees based on organization's revenue	Yes
Training, technical assistance, consultation, and quality assurance materials	Contact the developer	Contact the developer

## OTHER CITATIONS

Hirth, V., Baskins, J., & Dever-Bumba, M. (2009). Programs of All-Inclusive Care (PACE): Past, present, and future. *Journal of the American Medical Directors Association*, 10(3), 155–160. PubMed abstract available at <http://www.ncbi.nlm.nih.gov/pubmed/19233054>

Kane, R. L., Homyak, P., Bershadsky, B., & Flood, S. (2006). Variations on a theme called PACE. *Journals of Gerontology Series A: Biological and Medical Sciences*, 61A(7), 689–693. PubMed abstract available at <http://www.ncbi.nlm.nih.gov/pubmed/16870630>

## **TRANSLATIONAL WORK**

PACE programs are comprehensive community-based care models for frail, chronically ill older adults who are eligible for a nursing home because of their medical impairments. As such, Medicare and Medicaid programs have recognized the PACE model as a provider type since the 1990s, facilitating the expansion of PACE programs throughout the United States. The National PACE Association (NPA) provides a series of developmental opportunities to PACE organizations, including monthly informational teleconference calls with NPA members in PACE organizations; an interdisciplinary online training program designed to support PACE organizations in creating, training, and maintaining interdisciplinary teams; and annual conferences, forums, and summits. NPA supports the expansion of PACE by providing implementation resources to States through the Accelerating State Access to PACE (ASAP) program. The ASAP program is a grant-funded initiative providing direct training, technical assistance, and funding to States in order to expand the capacity of PACE. The growth of PACE programs has been documented in evaluation reports, case studies, and demonstration projects highlighting the strengths and limitations of implementation.

Providence ElderPlace in Portland, Oregon, was one of the first PACE sites. The PACE model has been successfully implemented to create Providence ElderPlace's Supportive Care Program, which provides palliative care. The Supportive Care Program is sustained by an interdisciplinary team with the goals of providing support and medical management to the Providence ElderPlace participants, easing participants' physical and emotional symptoms, and helping family members and caregivers through the bereavement process. A supportive care steering committee oversees program management and initiates improvements. Positive outcomes facilitated by the Supportive Care Program include an increase in the number of Providence ElderPlace participants who have a supportive care plan in place at their time of death, a decrease in the number of intensive care unit admissions in the last year of a participant's life, an increase in the percentage of participants who choose to remain in their place of residence until they die, and high satisfaction rates among participants' surviving family members with the end-of-life care provided to the participants. Program success has been attributed to the strong collaboration between Providence ElderPlace and caregivers from adult care, residential care, and assisted living organizations.

In 2001–2003, the PACE model was evaluated in three Veterans Affairs (VA) medical centers using three all-inclusive care models: a VA medical center in Ohio as the sole health care provider (Model I), a partnership between a VA medical center and a PACE provider in Colorado to share care responsibilities (Model II), and a contract generated by a VA medical center with a community PACE provider in South Carolina to provide all health care to veterans (Model III). The program evaluation examined health care utilization rates among 368 veterans 6 months before enrollment and 6–36 months after enrollment across the all-inclusive care programs. Findings indicated that participants in Models II and III, which included a partnership with PACE, had higher utilization rates of adult day health care compared with participants in Model I. Participants in Model III had higher rates of nursing home use and home care use 6 months after enrollment compared with participants in Models I and II. In addition, findings demonstrated that the VA medical centers were able to successfully implement three variations of all-inclusive care models with veterans.

PACE of the Triad is a nonresidential facility serving the greater Greensboro, North Carolina, region. The facility provides hospice care, on-site medical care, adult day care services, home health care, medication, and transportation services through a partnership initiated in 2008 with a health system, a home health agency, a retirement community, and a hospice. The partnership began through the development of a steering committee

to guide the planning, feasibility, and evaluation process to ensure that PACE was a suitable program for the region. Through grant funding from the health system, a marketing assessment and business plan were developed through consultation with a senior care research organization. The partnership recognizes that the start-up phase was very challenging, but the mutual team goal of improving the quality of care for frail older adults in the community was a powerful force to help overcome challenges. As of May 2011, PACE of the Triad began accepting applicants to receive services. All partners have contracts with PACE of the Triad to provide specific patient care services, and all partners are currently focused on ensuring long-term sustainability.

Site With Translational Work	Articles Describing Site's Translational Work, by Category					
	Planning/ Partners	Adoption	Reach/ Recruitment	Implementation	Effectiveness	Maintenance
<b>Providence ElderPlace, Portland, OR</b>	Article 1	Article 1	—	Article 1	Article 1	Article 1
<b>3 VA medical centers (in OH, CO, and SC)</b>	Article 2	Article 2	Article 2	Article 2	—	—
<b>PACE of the Triad, Greensboro, NC</b>	Article 3	Article 3	—	—	—	—

  

Article Number	Article Reference
1	Lee, M., & Booth, S. (2008). The PACE program and end-of-life care. <i>Providence ElderPlace</i> in Portland, Ore., develops unique approach for enrolled participants. <i>Health Progress</i> , 89(3), 62–66. PubMed abstract available at <a href="http://www.ncbi.nlm.nih.gov/pubmed/18488705">http://www.ncbi.nlm.nih.gov/pubmed/18488705</a>
2	Weaver, F. M., Hickey, E. C., Hughes, S. L., Parker, V., Fortunato, D., Rose, J., ... Baskins, J. (2008). Providing all-inclusive care for frail elderly veterans: Evaluation of three models of care. <i>Journal of the American Geriatrics Society</i> , 56(2), 345–353. PubMed abstract available at <a href="http://www.ncbi.nlm.nih.gov/pubmed/18070006">http://www.ncbi.nlm.nih.gov/pubmed/18070006</a>
3	Hospice and palliative care of Greensboro: Partnering to provide PACE. (2011, December). NewsLine. Retrieved from <a href="http://www.advhomecare.org/wp-content/uploads/PACEarticle_NHPCO.pdf">http://www.advhomecare.org/wp-content/uploads/PACEarticle_NHPCO.pdf</a>

## **CONTACTS**

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**Additional program information can be obtained through the following Web site:**

<http://www.npaonline.org>

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